

IN THE CLAIMS:

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- 81*
- Cont.*
1. (Original) A method for transmitting and receiving short message broadcast services in a communication system comprising:
 - transmitting a broadcast indicator to notify whether a base station is transmitting a broadcast message to a mobile station;
 - receiving at the mobile station, the broadcast indicator and checking a status of the broadcast indicator; and
 - receiving, at the mobile station, a broadcast message from said base station if the status of the broadcast indicator indicates that said base station is transmitting a broadcast message, wherein said broadcast message is received through a common control channel during a broadcast cycle.
 2. (Original) A method of claim 1, further comprising transmitting, from said base station to the mobile station, an index through a paging channel prior to transmitting the broadcast indicator, wherein the index is used to calculate the broadcast cycle.
 3. (Original) A method of claim 1, wherein transmitting the broadcast indicator through a quick paging channel before transmitting a broadcast message.

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4. (Original) A method of claim 3, wherein inserting and transmitting the broadcast indicator in a reserved region of the quick paging channel.

5. (Original) A method of claim 4, wherein the quick paging channel further includes a paging indicator and a configuration change indicator.

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6. (Original) A method of claim 3, wherein transmitting the broadcast indicator by at least 2 bits.

7. (Original) A method of claim 3, wherein transmitting the broadcast indicator 100ms prior to transmitting a broadcast message.

8. (Original) A method of claim 3, wherein transmitting a broadcast message through the paging channel.

9. (Original) A method of claim 1, further comprising:
adding a field to an expanded system parameter message and transmitting said field to the mobile station, wherein said field notifies whether said base station provides a broadcast indicator;

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checking, at the mobile station, the status of the broadcast indicator, if said field indicates that said base station provides a broadcast indicator; and
receiving, at the mobile station, a broadcast message from said base station if the status of the broadcast indicator indicates that said base station is transmitting a broadcast message.

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10. (Original) A method of claim 9, wherein monitoring, at the mobile station, a first slot of a control channel in every broadcast cycle, if said field indicates that said base station does not provide a broadcast indicator.

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11. (Original) A method of claim 9, wherein transmitting said field to the mobile station before transmitting a broadcast message to the mobile station.

12. (Original) A method of claim 9, wherein temporarily storing said field in a memory device of the mobile station.

13. (Original) A method of claim 1, wherein the common control channel is one of either a paging channel or a broadcast channel.

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14. (Original) A method of claim 1, wherein the mobile station enters an idle state if the broadcast indicator indicates that said base station not is transmitting a broadcast message.

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15. (Original) A method for transmitting and receiving short message broadcast services in a communication system comprising:

adding a field to an expanded system parameter message and transmitting said field to a mobile station, wherein said field notifies whether a base station provides a broadcast indicator;

transmitting a broadcast indicator through a quick paging channel before transmitting a broadcast message to notify whether the base station is transmitting a broadcast message to a mobile station;

receiving and checking, at the mobile station, the status of the broadcast indicator, if said field indicates that a base station provides a broadcast indicator; and

receiving, at the mobile station, a broadcast message from said base station if the status of the broadcast indicator indicates that said base station is transmitting a broadcast message, wherein said broadcast message is received through a common control channel during a broadcast cycle.

16. (Original) A method of claim 15, wherein inserting and transmitting the broadcast indicator in a reserved region of the quick paging channel by at least 2 bits.

17. (Original) A method of claim 15, wherein transmitting the broadcast indicator 100ms prior to transmitting a broadcast message.

18. (Original) A method of claim 15, wherein monitoring, at the mobile station, a first slot of a control channel in every broadcast cycle, if said field indicates that said base station does not provide a broadcast indicator.

19. (Original) A method of claim 15, wherein the mobile station enters an idle state if the broadcast indicator indicates that said base station not is transmitting a broadcast message.

20. (Previously Presented) A method for receiving a broadcast message, comprising:
receiving a broadcast indicator on a first common channel and checking a status of the broadcast indicator; and
receiving a broadcast message from a base station if the status of the broadcast indicator indicates that the base station is transmitting the broadcast message, wherein the

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broadcast message is received through a second common control channel during a broadcast cycle.

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21. (Previously Presented) The method of claim 20, wherein the first common channel is a quick paging channel (QPCH).

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22. (Previously Presented) The method of claim 20, wherein if the status of the broadcast indicator indicates that no broadcast message is transmitted, then the second common control channel is not monitored for a broadcast message.

23. (Previously Presented) The method of claim 20, further comprising:
receiving an extended system parameters message containing a broadcast indicator supported field; and
checking the status of the broadcast indicator if the broadcast indicator supported field indicates that the base station has provided a broadcast indicator.

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24. (Previously Presented) The method of claim 23, wherein a first slot of the paging channel is continuously monitored if the base station does not provide a broadcast indicator.

25. (Previously Presented) The method of claim 20, wherein the base station provides the broadcast message indicator 100ms prior to sending the broadcast message.

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26. (Previously Presented) A subscriber unit for a mobile communication system, comprising:

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means for monitoring a first common channel to determine a value of a broadcast indicator carried on that channel; and

means for monitoring a second common channel to receive a broadcast message only when a value of the broadcast indicator indicates that the broadcast message is present on the second common channel.

27. (Previously Presented) The device of claim 26, wherein the first common channel is a quick paging channel (QPCH), and wherein the second common channel is a paging channel.

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28. (Previously Presented) The device of claim 27, wherein the means for the monitoring a first common channel further determines a value of a plurality of paging indicators and a configuration change indicator carried on the QPCH.

29. (Previously Presented) The device of claim 28, wherein the broadcast indicator is sequenced before the configuration change indicator on the QPCH.

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30. (Previously Presented) The device of claim 28, wherein the plurality of paging indicators are used to indicate that the subscriber unit operating in an idle state should monitor at least one of the paging channel and a Forward Common Control Channel starting in a next slot, the broadcast indicator indicates whether a broadcast message is present on the paging channel, and the configuration change indicator is used to indicate that the subscriber unit operating in the idle state should monitor at least one of the paging channel, the Forward Common Control Channel, and a Broadcast Control Channel after performing an idle handoff, to determine if prescribed stored parameters of the subscriber unit should be updated.
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31. (Previously Presented) An information slot in a quick paging channel (QPCH), comprising:

a plurality of paging indicators to indicate that a mobile station operating in an idle state should monitor at least one of a Paging Channel and a Forward Common Control Channel starting in a next slot;

a broadcast indicator to indicate whether a broadcast message is present on a paging channel; and

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a configuration change indicator to indicate that the mobile station operating in the idle state that, after performing an idle handoff, it should monitor at least one of the Paging Channel, the Forward Common Control Channel, and a Broadcast Control Channel to determine if the mobile station should update stored parameters.

32. (Previously Presented) The information slot of claim 31, wherein the broadcast indicator precedes the configuration change indicator in the information slot.

33. (Previously Presented) The information slot of claim 31, wherein each of the broadcast indicator and the configuration change indicator has a length of 2 bits when a data rate is 4800bps.

34. (Previously Presented) The information slot of claim 31, wherein each of the broadcast indicator and the configuration change indicator has a length of 4 bits when a data rate is 9600bps.

35. (Previously Presented) The information slot of claim 31, wherein the information slot is sent from a base station to a subscriber unit to indicate whether the base station is transmitting a broadcast message.

36. (Previously Presented) The information slot of claim 35, wherein the base station is indicated to have sent a broadcast message when the broadcast indicator is set to 1.

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37. (New) A method comprising setting a broadcast indicator to "ON" for a Quick Paging Channel slot which begins 100 ms prior to the beginning of a Paging Channel slot in which a broadcast message begins, wherein the method is performed when a base station sends the broadcast message.

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38. (New) The method of claim 37, wherein the broadcast message contains a broadcast page.

39. (New) The method of claim 37, comprising setting the broadcast indicator in a Quick Paging Channel slot to "OFF" when a broadcast message is not expected in a corresponding Paging Channel slot.

40. (New) The method of claim 37, wherein the method is implemented in a base station.

41. (New) The method of claim 37, wherein a indicator rate of the Quick Paging Channel is 4800 bps.

42. (New) The method of claim 41, wherein the broadcast indicator is positioned in two Quick Paging Channel bit positions prior to the last two bits in the first 40 ms half of a Quick Paging Channel slot of the Quick Paging Channel.

43. (New) The method of claim 41, wherein the broadcast indicator is positioned in the two Quick Paging Channel bit positions to the last two bits in a Quick Paging Channel slot of the Quick Paging Channel.

44. (New) The method of claim 37, wherein an indicator rate of the Quick Paging Channel is 9600 bps.

45. (New) The method of claim 44, wherein the broadcast indicator is positioned in the four Quick Paging Channel bit positions prior to the last four bits in the first 40 ms half of a Quick Paging Channel slot of the Quick Paging Channel.

46. (New) The method of claim 44, wherein the broadcast indicator is positioned in the four Quick Paging Channel bit positions to the last four bits in a Quick Paging Channel slot of the Quick Paging Channel.

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47. (New) An apparatus configured to implement the method of claim 37.
48. (New) The apparatus of claim 47, wherein the apparatus is a base station.
49. (New) A method comprising monitoring broadcast indicators on a Quick Paging Channel if an indicator is equal to "1", wherein the indicator indicates that a broadcast indicator is supported in the Quick Paging Channel.
50. (New) The method of claim 49, wherein the indicator is in a QPCH_BI_SUPPORTED field in an extended system parameter message.
51. (New) The method of claim 49, wherein said monitoring broadcast indicators is monitoring slots of the Quick Paging Channel.
52. (New) The method of claim 51, wherein broadcast slots of the Quick Paging Channel are offset from common control channel slots by 100 ms.
53. (New) The method of claim 49, wherein said monitoring broadcast indicators is performed only if BCAST_INDEX is not equal to "000".

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54. (New) The method of claim 53, wherein BCAST_INDEX is a broadcast slot cycle index.

55. (New) An apparatus configured to implement the method of claim 49.

56. (New) The apparatus of claim 55, wherein the apparatus is a mobile station.

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57. (New) A method for sending a broadcast message comprising:
setting at least one broadcast indicator in a Quick Paging Channel, wherein the broadcast indicator indicates existence of the broadcast message on a common control channel; and
transmitting said at least one broadcast indicator from the base station.

58. (New) The method of claim 57, further comprising the steps of:
setting a first information in an overhead message before transmitting the broadcast indicator, wherein the first information indicates a broadcast slot cycle index of transmitting the broadcast message;
setting a second information in the overhead message, wherein the second information indicates whether or not the broadcast indicator is supported in the quick paging channel; and

transmitting the overhead message through the common control channel.

59. (New) The method of claim 58, wherein the broadcast cycle index is 3 bits.

60. (New) The method of claim 58, wherein the overhead message is an extended system parameter message.

61. (New) The method of claim 58, wherein the first information is a broadcast slot cycle index field BCAST_INDEX and the second information is OPCH_BI_SUPPORTED.

62. (New) The method of claim 61, wherein the broadcast slot cycle index field BCAST_INDEX is i , $1 \leq i \leq 7$.

63. (New) The method of claim 57, wherein the common control channel is a paging channel.

64. (New) The method of claim 57, wherein the common control channel is broadcast channel.

65. (New) The method of claim 57, comprising transmitting the broadcast message in the common control channel at a predetermined amount of time after said transmitting said at least one broadcast indicator.

66. (New) The method of claim 65, wherein the predetermined amount of time is 100ms.

67. (New) The method of claim 57, comprising transmitting to the mobile station a parameter in the common control channel notifying the mobile station that broadcast indicators in the Quick Paging Channel are supported.

68. (New) The method of claim 63, wherein the parameter is QPCH_BI_SUPPORTED.

69. (New) A method comprising transmitting or receiving data of a quick paging channel, wherein the data comprises:
at least one paging indicator;
at least one configuration change indicator; and
at least one broadcast indicator.

70. (New) The method of claim 69, wherein for each slot of the quick paging channel said at least one broadcast indicator is adjacent and between said at least one paging indicator and said at least one configuration change indicator.

71. (New) A method comprising:
receiving a broadcast indicator on a quick paging channel; and
if the broadcast indicator indicates existence of a broadcast message, then monitoring a common control channel for reception of the broadcast message.

72. (New) The method of claim 71, wherein the common control channel is a paging channel.

73. (New) The method of claim 71, wherein the common control channel is a broadcast channel.

74. (New) The method of claim 71, wherein the method is implemented in a mobile station.

75. (New) The method of claim 74, wherein the method is implemented only if the mobile station supports monitoring the broadcast indicator in the quick paging channel.

76. (New) The method of claim 71, further comprising the steps of:
receiving an overhead message through a common channel before receiving the
broadcast indicator on the QPCH; and
obtaining a first information and a second information in an overhead message,
wherein the first information indicates a broadcast slot cycle index of transmitting the
broadcast message and the second information indicates whether or not the at least one
broadcast indicator is supported in the quick paging channel.

77. (New) The method of claim 76, wherein the overhead message is an extended
system parameter message.

78. (New) The method of claim 76, wherein the first information is a broadcast slot
cycle index field BCAST_INDEX and the second information is a
QPCH_BI_SUPPORTED.

79. (New) The method of claim 78, wherein the broadcast slot cycle index field
BCAST_INDEX is 3 bits.

80. (New) The method of claim 79, wherein the 3 bits represent a number ranging from 1 to 7.

BT 81. (New) A mobile station configured to:
receive broadcast messages; and
monitor broadcast indicators in a Quick Paging Channel broadcast slot.

82. (New) The mobile station of claim 81, wherein if the mobile station monitors broadcast indicators and determines that they are not set to "OFF", the mobile station receives its assigned broadcast slot on the Forward Common Control Channel or Paging Channel immediately following its assigned Quick Paging Channel broadcast slot.
